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ABSTRACT

Expressed concerns about competency-based education implementation by vocational teachers in six school divisions in Virginia were monitored from April 1983 to April 1984 during the last two years of a movement to statewide competency-based education implementation. At six-month intervals--in April and October 1983 and April 1984--vocational teachers completed the Stages of Concern questionnaire, findings showed that: passage of time did not affect teachers' concerns; participation in school division workshops and participation in one teachers' conference session on competency-based education decreased lower stage concerns and increased higher stage concerns; participation in supervisory area workshops decreased concerns; and participation in one competency-based education course increased concerns, while participation in two or more courses decreased concerns. Recommendations entailed (1) not requiring use of the innovation by teachers unable to satisfy lower stage concerns after a period of time, (2) preparing teachers in different service areas for an innovation with inservice activities emphasizing the uniqueness of that area, and (3) monitoring concerns of vocational teachers while they are adopting an innovation. (Ten tables are appended.) (YLB)

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Assessment of Vocational Teachers' Concerns About the Adoption of Competency-Based Education

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Final Report

Submitted to
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Assessment of Vocational Teachers' Concerns About the Adoption of Competency-Based Education

The Virginia Department of Education launched a statewide effort in competency-based education (CBE) for vocational education by establishing the following objective:

> By June 30, 1982, each school division shall have implemented competency-based instruction in approved vocational education programs based on V-TECS and IDECC catalogues if available or other competency-based materials as reported in the annual Local Evaluation Programs, and each community college shall have implemented competency-based instruction in at least one program based on V-TECS materials as reported by the Virginia Community College System. (Guide, 1981, p. 1).

In an attempt to prepare vocational teachers for the implementation of CBE, all vocational program service areas in Virginia offered workshops, conferences, and credit courses on the topic. A state-wide inservice effort was launched which saw a coordinated effort among teacher educators, state department supervisors, and local school divisions. The effort was conducted during 1980 and 1981 in order to implement CBE by its deadline. At the same time, vocational preservice programs integrated instruction on CBE in order to prepare new teachers for its use.

In late 1981, the Virginia Department of Education delayed the implementation date for CBE until June 30, 1984. The delay was made to permit all educational programs, including academic programs, to become competency-based.

Whenever a state department of education mandates a policy change, it should be monitored for actual implementation. One method for such monitoring is to follow subjects through the adoption process. A commonly recognized adoption process consists of the five stages of (a) awareness, (b) interest, (c) evaluation, (d) trial, and (e) adoption (Rogers & Shoemaker, 1971).

If an innovation in vocational education is to be adopted on a statewide basis, then the participation of classroom teachers is crucial. Such participation will depend largely on the degree to which they are comfortable with the innovation. One method for determining the degree of comfort teachers have with an innovation is to monitor their concerns about it. Early work in this area was conducted by Margaret Phillips in 1932 when she reported on "Some Problems of Adjustment in the Early Years of a Teacher's Life" in the British Journal of Educational Psychology (Hall, George, & Rutherford, 1977).

Other early work emphasized the anxiety levels of educators. In 1963 Thompson asked 125 student teachers to respond to a checklist of anxieties (Hall, et al., 1977). Travers, Robinowitz, and Nemovicher in 1952 analyzed the before and after anxieties of 120 elementary student teachers (Hall, et al., 1977).

John Gabriel (1957) measured the concerns of experienced and inexperienced teachers in England. He found that inexperienced teachers were concerned about criticism

from superiors and maintaining discipline, while experienced teachers were concerned about the slow progress of pupils.

Frances Fuller (1969) proposed a developmental conceptualization of teachers' concerns. She used her background as a counseling psychologist rather than a pedagogical base to develop her list of concerns. Fuller's work at the University of Texas at Austin led to different stages of concerns. These stages started as three phases (a) pre-teaching phase: non-concern, (b) early teaching phase: concern with self, and (c) late concerns: concerns with pupils (Fuller, 1969). Additional research and development led to identification of seven stages of concerns (Hall, et al., 1977). Those stages were (a) awareness, (b) information, (c) personal, (d) management, (e) consequence, (f) collaboration, and (g) refocus.

STAGES OF CONCERN ABOUT AN INNOVATION

1. AWARENESS: Little concern about or involvement with the innovation is indicated.

2. INFORMATIONAL: A general awareness of the innovation and interest in learning more detail about it is indicated. Individuals seem to be unworried about themselves in relation to the innovation. They are interested in substantive aspects of the innovation in a selfless manner such as general characteristics, effects, and requirements for use.

3. PERSONAL: Individuals are uncertain about the demands of the innovation, their inadequacy to meet those demands, and their roles with the innovation. This includes analysis of their roles in relation to the reward structure of the organization, decision making and consideration of potential conflicts with existing structures or personal commitment. Financial or status implications of the program for self and colleagues may also be reflected.

4. MANAGEMENT: Attention is focused on the processes and tasks of using the innovation and the best use of information and resources. Issues related to efficiency, organizing, managing, scheduling, and time demands are utmost.

5. CONSEQUENCE: Attention focuses on impact of the innovation on students in the immediate sphere of influence. The focus is on relevance of the innovation for students, evaluation of student outcomes, including performance and competencies, and changes needed to increase student outcomes.

6. COLLABORATION: The focus is on coordination and cooperation with others regarding use of the innovation.

7. REFOCUSING: The focus is on exploration of more universal benefits from the innovation, including the possibility of major changes or replacement with a more powerful alternative. Individuals have definite ideas about alternatives to the proposed or existing form of the innovation (Newlove & Hall, 1976).

Gene Hall (Hall, et al., 1977) in collaboration with others has utilized Fuller's concerns-based model to monitor the implementation of innovations in educational settings. Examples of such use were: module utilization in a higher education setting, competency-based teacher education in a regional teacher training institution, and team teaching in a school setting.

The monitoring of expressed concerns provides opportunity for feedback to teacher educators providing inservice instruction and to administrators assisting with implementation of an educational innovation. Expressed concerns also permit identification of acceptance or adoption of the innovation on the part of teachers. As the utilizers of an innovation have lower stage concerns

satisfied, they move to higher stage concerns. If innovation utilizers do not have lower stage concerns satisfied they frequently will quit using the innovation. Both of these situations would result in the overall concerns for a group proceeding to a higher stage.

For the present study a detemination was made to monitor the expressed concerns about CBE implementation by vocational teachers in six different school divisions in Virginia. The time period chosen for the monitoring was April 1983 to April 1984. This period was during the last two years of a movement to statewide competency-based education implementation.

Objectives

The specific objectives of this study were:

1. To monitor the change in expressed concerns about implementation of CBE of a sample of vocational teachers.
2. To compare the expressed concerns about CBE implementation of vocational teachers in different service areas.
3. To determine differences in vocational teachers' stages of concern related to the variables of level of education, sex, age, and type and amount of inservice education.

Methods and Procedures

Sample

Six Virginia school divisions were selected in order to provide ranges of geographic locations, school sizes, and amounts of experience and inservice education related to competency-based education. The school divisions were

Appomattox County, Carroll County, Dinwiddie City, Frederick County, Hampton City, and Northern Neck Vocational Center. The sample consisted of the vocational teachers in each of these six school divisions.

Instrument

The Stages of Concern (SOC) questionnaire was developed and validated by Hall, George, and Rutherford (1979) and subjected to extensive reliability analysis. Presented in Table 1 are the coefficient alpha reliability indexes reported by authors of the SOC and those for this study.

Insert Table 1 about here

The SOC consists of 35 items, five for each of the seven stages of concern. A personal data form was added to the questionnaire to secure information related to the independent variables used in this study: vocational program area, sex, age, level of education, and type and amount of inservice education on CBE.

Data Collection

The vocational directors in the six school divisions were contacted and agreed to participate in the study. A three-stage survey was conducted at six-month intervals in April and October of 1983 and April of 1984. For each administration, copies of the questionnaire were mailed to the vocational directors, who distributed them to all

vocational teachers. The teachers were instructed to return the completed instrument to the vocational director or a designated representative for return to the researchers. Anonymity of individuals and school divisions in reporting the results of the study was assured.

Data Analysis

The data were analyzed using the SPSS-X computer program. Frequencies and means were calculated, followed by the use of analysis of variance procedures to identify mean differences within the stages of concern for each of the independent variables. The researchers are cognizant of the problems associated with the use of inferential statistics with a population. The assumption made for this study is the one advocated by Oliver and Hinkle (1982), which is to assume that the participants in a given year are a representative sample of participants over time. When significant differences were found the Tukey post hoc procedure was used to indicate the specific location of the differences.

Findings

Table 2 indicates the stages of concern expressed by vocational education teachers over a period of one and one-half years. Trends which can be noted include an increase in the awareness stage of 1.40 to 1.62, a decrease in informational stage from 3.57 to 3.39, and a decrease in the collaboration stage from 3.44 to 3.22. The highest mean

for all three administrations was for the consequence stage. The lowest mean for all three administrations was for the awareness stage. No statistically significant differences were found at any of the stages; however, both the awareness stage and the refocus stage approached significant differences at p=.08. The teachers tended to become less concerned about implementing CBE over the time of the study. The first administration had the highest mean scores and the third administration had the lowest mean scores on four of the seven stages of concern.

Insert Table 2 about here

In analyzing differences associated with the independent variables of vocational service area, level of education, sex, age, and amount and type of inservice education, only the results of the third administration of the questionnaire were used. Since this was the most recent response, the assumption was made that it would most accurately reflect the current concerns of the vocational teachers.

The mean scores for each stage of concern when the respondents were grouped by vocational service area are presented in Table 3. Only the informational stage resulted in a significant difference among the groups, with business teachers having the highest mean (3.96) and marketing educators the lowest mean (2.51). This difference was

reflected to a lesser extent on the other stages, with business having the highest mean score on four of the seven stages of concern and marketing having the lowest mean on five of the seven. A partial explanation for the low mean scores of marketing teachers is the fact that for several years they have used the Interstate Distributive Education Curriculum Consortium (IDECC) materials which use a competency-based format.

Insert Table 3 about here

Table 4 indicates the stages of concern for vocational educators categorized by level of education. Teachers who had associate degrees had a significantly higher mean score (5.14) for the personal stage than teachers who had a high school education (2.90). There were not significant differences on the other stages of concern, but the trend was similar with associate degree teachers having the highest means on five of the seven stages and those with high school diplomas having the lowest mean scores on six of the seven stages.

Insert Table 4 about here

Mean scores for male and female vocational educators for each stage of concern are reported in Table 5. Males had higher mean scores on the informational, consequence,

collaboration, and refocus stages while the female teachers had higher means on the awareness, personal, and management stages. Although none of these differences were significant, it can be noted that the males tended to express relatively greater concern on the higher stages of the concerns continuum.

Insert Table 5 about here

The variable age was not associated with significant differences on any of the stages of concern (Table 6). Teachers in the middle age groups tended to have slightly higher levels of concern than those in the younger and older age groups. Those in the 40 to 49 age group, for example, had the highest mean scores on four of the seven stages, and the 20 to 29 and 50 or above age groups each had the lowest mean scores of the age groups on three of the seven stages of concern.

Insert Table 6 about here

When stages of concern were examined by the number of school division workshops attended, it was found that the lowest mean score (1.51) was found for the awareness stage for vocational education teachers who attended two or more workshops (note Table 1). By contrast the highest mean score was expressed for consequence by those who attended

two or more school division workshops, with a mean score of 4.29. For both the awareness and informational stages the mean scores decreased with the greater number of workshops attended. For the consequence and collaboration stages, the mean score increased as the number of workshops attended increased. Teachers who had attended no school division workshops had the highest mean scores on five of the seven stages of concern.

Insert Table 7 about here

Another type of inservice education on CBE consisted of workshops offered by area supervisors from the Virginia Department of Education. Table 8 displays the mean scores for vocational educators' stages of concern based on the number of supervisory area workshops attended. The lowest mean score (1.41) was at the awareness stage for teachers who had attended one area workshop. The highest mean score (4.15) was at the consequence stage for teachers who had attended two or more area workshops. A relatively high proportion (61.3%) of the teachers had attended no area workshops on CBE, and these teachers had the highest mean scores on six of the seven stages of concern.

Insert Table 8 about here

In analyzing the number of CBE sessions attended at

state teachers' conferences, the highest mean score (4.25) was at the consequence stage for those teachers who had attended one CBE session (note table 9). Overall, the highest means were expressed at the consequence stage; the second highest means were expressed at the personal stage; and the lowest means were expressed at the awareness stage. Teachers who had not attended CBE sessions had the highest mean scores for the lower stages of concern.

Insert Table 9 about here

Table 10 indicates the stages of concern by number of CBE courses enrolled in by subjects. The stage of concern with the largest difference among means was management which was statistically significant at p= .01. For this stage the teachers with the lowest mean (2.12) were those who had enrolled in no CBE courses, second lowest was expressed by teachers who had taken two or more CBE courses (3.65), while the highest mean (3.77) was expressed by teachers who had enrolled in one CBE course. A very large majority (93.3%) of the teachers had enrolled in one or more CBE courses. Teachers who had enrolled in one CBE course had the highest mean scores on five of the seven stages of concern. Teachers who had taken two or more courses had the lowest mean scores on five of the seven stages.

Insert Table 10 about here

Conclusions

Based on the findings of this study the following conclusions about CBE concerns were drawn.

1. The passage of time did not affect the teachers' concerns.
2. Business and marketing teachers showed the largest differences among all vocational service areas.
3. Teachers whose highest level of education was high school and those who had associate degrees showed the largest differences among the levels of education.
4. The sex of teachers did not affect the teachers' concerns.
5. The age of teachers did not affect the teachers' concerns.
6. Participation in school division workshops decreased lower stage concerns and increased higher stage concerns.
7. Participation in supervisory area workshops decreased concerns.
8. Participation in one teachers' conference session on CBE decreased lower level concerns and increased higher level concerns.
9. Participation in one CBE course increased concerns while

participation in two or more courses decreased concerns.

Recommendations and Discussion

1. Once sufficient lead time has been provided for vocational teachers to adopt an innovation, additional time should not be given in anticipation of movement to higher stages of concerns. Higher stages of concern cannot be achieved unless teachers have the opportunity to implement or satisfy lower stages of concerns. This is a function of experience rather than time.
2. Teachers who are unable to satisfy lower stage concerns after a period of time should not be required to use the innovation. Such teachers may never reach higher stages of concern and will make it difficult for the innovation to succeed.
3. Teachers in different service areas should be prepared for an innovation with inservice activities that emphasize each area's unique aspects, terminology, typical level of education, and problems. Enough differences occurred among the service areas to indicate different stages of concern and the desirability of channeling inservice activities to their unique needs.
4. For a statewide adoption process, there should be cooperative efforts among the state department of education, teacher education institutions, and local school divisions. These efforts should involve a variety of preservice and inservice education activities.

5. A system should be used to monitor the concerns of vocational teachers while they are adopting an innovation. This system can provide feedback to change agents, determine direction for inservice activities, and identify target groups for more intensive efforts.

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Table 1

Coefficient Alpha Reliability Indexes for the Stages of Concern Questionnaire

Stages of concern	SOC study	Current study
Awareness	.64	.57
Informational	.78	.66
Personal	.83	.82
Management	.75	.76
Consequence	.76	.71
Collaboration	.82	.78
Refocus	.71	.81

Table 2

Mean Scores on Stages of Concern by Time of Administration

Stages of concern	First administration (n=200)	Second administration (n=169)	Third administration (n=191)	p
Awareness	1.40	1.52	1.62	.08
Informational	3.57	3.53	3.39	.44
Personal	4.11	3.90	3.86	.30
Management	3.43	3.39	3.63	.30
Consequence	4.28	4.09	4.08	.26
Collaboration	3.44	3.44	3.22	.24
Refocus	3.11	2.82	3.07	.08

Note. Means based on a scale of 0 (irrelevant) to 7 (very true of me).

Table 3

Mean Scores on Stages of Concern by Service Area

Stages of concern	Agriculture (n=24)	Business (n=52)	Marketing (n=9)	Health (n=4)	Home economics (n=38)	Industrial arts (n=25)	Trade & industrial (n=35)	p
Awareness	1.52	1.97	1.00	1.27	1.72	1.55	1.29	.06
Informational	3.29	3.96	2.51	3.35	3.18	3.58	3.05	.02
Personal	3.45	4.54	3.43	3.95	3.70	3.93	3.57	.12
Management	3.41	4.05	3.93	3.75	3.55	3.38	3.52	.54
Consequence	4.30	4.06	3.31	4.60	3.95	4.29	4.10	.61
Collaboration	3.25	3.11	3.20	2.50	3.10	3.81	3.13	.50
Refocus	3.25	3.11	2.25	2.93	3.15	3.27	3.02	.54

Note. Means based on a scale of 0 (irrelevant) to 7 (very true of me).

Table 4

Mean Scores on Stages of Concern by Highest Level of Education

Stages of concern	High school (n=10)	Associate degree (n=7)	Bachelors degree (n=105)	Masters degree (n=62)	p
Awareness	1.56	1.17	1.69	1.60	.70
Informational	2.58	3.97	3.56	3.28	.12
Personal	2.90	5.14	4.10	3.68	.03
Management	3.46	4.45	3.60	3.63	.60
Consequence	3.60	5.23	3.98	4.21	.08
Collaboration	2.28	3.91	3.20	3.47	.08
Refocus	2.22	3.09	2.98	3.26	.09

Note. Means based on a scale of 0 (irrelevant) to 7 (very true of me).

Table 5

Mean Scores on Stages of Concern by Sex of Teachers

Stages of concern	Males (n=87)	Females (n=93)	p
Awareness	1.54	1.62	.61
Informational	3.45	3.25	.36
Personal	3.81	3.82	.99
Management	3.46	3.62	.50
Consequence	4.26	3.88	.08
Collaboration	3.46	3.10	.11
Refocus	3.10	2.97	.49

Note. Means based on a scale of 0 (irrelevant) to 7 (very true of me).

Table 6

Mean Scores on Stages of Concern by Age of Teachers

Stages of concern	20-29 (n=23)	30-39 (n=86)	40-49 (n=55)	50 or above (n=27)	p
Awareness	1.53	1.59	1.64	1.63	.97
Informational	3.40	3.18	3.60	3.32	.34
Personal	3.90	3.62	4.22	3.59	.23
Management	3.38	3.49	3.78	3.48	.67
Consequence	3.89	4.14	4.11	4.13	.90
Collaboration	3.51	3.20	3.30	3.19	.85
Refocus	3.05	3.09	3.04	3.00	.99

Note. Means based on a scale of 0 (irrelevant) to 7 (very true of me).

Table 7

Mean Scores on Stages of Concern by Number of CBE School Division Workshop Attended

Stages of concern	None (n=70)	One (n=56)	Two or more (n=68)	p
Awareness	1.78	1.57	1.51	.33
Informational	3.67	3.23	3.22	.14
Personal	3.94	3.76	3.86	.86
Management	3.82	3.45	3.57	.45
Consequence	3.87	4.08	4.29	.24
Collaboration	3.07	3.10	3.46	.27
Refocus	3.22	2.93	3.04	.43

Note. Means based on a scale of 0 (irrelevant) to 7 (very true of me).

Table 8

Mean Scores on Stages of Concern by Number of CBE Area Workshops Attended

Stages of concern	None (n=119)	One (n=38)	Two or more (n=37)	p
Awareness	1.73	1.41	1.45	.18
Informational	3.51	3.24	3.15	.34
Personal	3.94	3.62	3.86	.64
Management	3.64	3.63	3.56	.96
Consequence	4.09	3.97	4.15	.86
Collaboration	3.30	2.88	3.31	.33
Refocus	3.09	3.07	3.00	.92

Note. Means based on a scale of 0 (irrelevant) to 7 (very true of me).

Table 9

Mean Scores on Stages of Concern by Number of CBE Sessions Attended at State Teachers' Conferences

Stages of concern	None (n=82)	One (n=58)	Two or more (n=54)	p
Awareness	1.78	1.44	1.54	.18
Informational	3.56	3.45	3.08	.17
Personal	4.00	3.97	3.55	.32
Management	3.66	3.48	3.74	.69
Consequence	4.08	4.25	3.89	.42
Collaboration	3.22	3.32	3.12	.79
Refocus	3.07	3.96	3.19	.62

Note. Means based on a scale of 0 (irrelevant) to 7 (very true of me).

Table 10

Mean Scores on Stages of Concern by Number of CBE Courses Taken

Stages of concern	None (n=13)	One (n=101)	Two or more (n=80)	p
Awareness	1.68	1.62	1.61	.98
Informational	3.52	3.56	3.16	.18
Personal	3.97	4.03	3.64	.36
Management	2.12	3.77	3.65	.01
Consequence	3.88	4.28	3.86	.14
Collaboration	3.32	3.33	3.07	.51
Refocus	2.75	3.07	3.12	.63

Note. Means based on a scale of 0 (irrelevant) to 7 (very true of me).